

The American Veteran, Edition 7, Part 2

Jim Benson: Welcome back. Wheelchair research has entered a new generation. Science combined with computer games is designing some of the most high tech chairs around.

Naomi Spinrad, narrator: For the next 2 weeks, every move Army veteran Adrian Benson makes will be recorded.

Adrian Benson, Jackson, Mississippi: I don't even realize it is there. As long as you don't say where I've been, we all right.

Spinrad: While the researchers may not know where Adrian goes, they do hope by studying his daily routines, they will be able to match him and other vets with the right wheelchairs. Chairs that best fit their physical limitations due to their specific injuries.

Rory Cooper, PhD, Senior Career Scientist: We can see if individuals who are more or less active or have one type of chair or another type of chair are more prone to injuries or have more wheelchair maintenance issues.

Spinrad: Adrian, who was paralyzed in a car accident, has a data logger attached to his wheelchair. The data logger measures how fast he goes, how far, and how many strokes he takes.

Cooper: If you know how many strokes they take, then you know how much stress is on the shoulder, on the wrist and on the elbow. Then we can determine whether one type of chair or another type of chair, the set up of a chair is more likely or less likely to wear out their shoulders.

Spinrad: In this joint study conducted at the National Wheelchair Games, researchers from the University of Pittsburgh and the VA are also looking at the affect wheelchair sports have on joints.

Michael Boninger, MD, Human Engineering Research Lab: We know that wheelchair rugby can inflame tendons, but we don't think that that sport is actually bad for the people here. We think it's great for people and there's been great research showing that.

Spinrad: Ultrasound is another tool used to examine injuries to wheelchair users.

Boninger: By studying the athlete as they are doing the sport, we are hoping to learn from them and actually reduce injury that occurs in athletes and non-athletes alike.

Spinrad: Carpal tunnel syndrome is a common complaint among wheelchair users.

Spinrad: Participants like Marine veteran Sean Gabriel are monitored before and after their game. Researchers are looking to pinpoint where stress is placed on the wrist and shoulders.

Cooper: These are reflective markers and the cameras will shine an infra-red light on them.

Spinrad: Here, reflective markers are placed on different parts of the body and the information is sent to a computer to create an animated figure.

Cooper: With that data, we can put it into a computer model along with the data we collect from our device called the “smart wheel” and we can then estimate the forces of the wrist, elbow and shoulder.

Spinrad: From this, researchers can design ergonomic hand rims or move the position of the wheel to better fit the user.

Spinrad: Navy veteran Tom Durbin is playing a computer game. Tom was paralyzed from the waist down in an auto accident. Instead of using a joystick, Tom turns a hand crank which tracks his movements. Lead researcher, Rory Cooper, also a wheelchair user, coaches Tom in this rehabilitation “game.”

Spinrad: The “game” measures calories burned, resistance and revolutions per minute. VA hospitals would use this as a form of physical therapy.

Cooper: You not only get the data from the game but you also get the standard exercise data.

Durbin: You will get a good exercise and it will fatigue your muscles, but you will want to keep competing because you will want to win the game.

Spinrad: Researchers believe fun and games mixed with hard science and careful study will help them design the next generation of wheelchairs – keeping our veterans active and healthy.

Benson: To learn more about wheelchair research, visit www.vawheelchairinfo.org

For some, modern medicine is not the only answer to chronic health problems.

The Integrative Health Care Program at the Salt Lake City VA Medical Center uses alternative healing techniques such as acupuncture and meditation. Scott Wallace reports.

Eric Baker, Iraq War veteran: I've seen all sorts of doctors. I've got back pain, also psychological problems. I've seen orthopedic surgeons. I've seen homeopathic doctors. I've been on three anti-depressants. I've tried just about everything.

Wallace: For Erik Baker, the war in Iraq left him with pain and depression no medication could lift. In the Integrative Health Program at the Salt Lake City VA Health Care System, he was introduced to traditional Chinese medicine.

Baker: I first came to acupuncture. That night when I went to sleep, I woke refreshed and a lot of my pain was gone. And then the hypnosis; it's helped me be able to calm myself. It has been beneficial to me to step outside traditional doctors.

Wallace: Chronic health problems like Erik's are now being successfully addressed by this program. Taking its inspiration from the surrounding Native American population, VA Salt Lake City has created an outdoor healing ground. It's part of the integrative health program at the hospital that utilizes holistic healing techniques.

Sandra Smeeding, Salt Lake City VA Health Care System Co-director: Integrative Health Care means it's the best of the combination of traditional Western medicine and complementary and alternative medicines.

Wallace: The Integrative Health Program opened its doors in 2001, and offers 14 different holistic therapies derived from both Eastern and Western practices.

James Floyd: Our philosophy is we treat the mind the body and the spirit. And we feel that these programs here, both the gardens and the grounds, help provide that part of the healing. "Purk-wahgahm" is a Northern Ute word that means "healing ground," so the "Purk-wahgahm" has been blessed by tribal medicine men. Its purpose was to deal with pain management and substance abuse issues.

The ceremonies are derived from concepts of the Native American tribes in this area. The drumming circle represents kind of the heartbeat, it allows them as patients to get in tune with themselves. The fire allows them to come together in a circle, allows them be open. And those are some things our clinicians can't get from them when they're inside a room.

Wallace: Six months ago, Jacques Richards came here for help with substance abuse.

Richards: The Healing Grounds was a place of sanctuary. Even when I was in the program, at any time of the night - day or night - you could come over to the Healing Grounds, open that gate, and close it and it was just you.

Wallace: Now a volunteer with the integrative health program, Jacques assists during the group ceremony known as "Sweat Lodge." What happens inside the Sweat Lodge is private and can not be shown.

Richards: I set up the fire pit with logs, and rocks are put on top of all the wood, it's heated until that fire burns all the way down. Then the lodge is completely set up and those rocks are brought in. The door is closed and the ceremony starts. You have to offer prayers while you're heating those rocks and you greet the fire and Creator, and you start, you ask for the blessings that He's with you. It's a good feeling. It helps me stay in the now.

Wallace: Therapist Rodney Betonney uses the power of the sweat lodge to get to the source of an addiction.

Rodney Betonney, Addiction Therapist: I believe that this fuel comes from things like trauma, abuse, shame, guilt. If you can get to the core of that and deal with the core of that, it can turn that around for the individual. Indian people believe that when the opening is lifted, your prayers are carried up to the Creator on the steam and the smoke as it leaves the ceremony. Your spiritual being does not know addiction. So, when you're in your spiritual being it will help you to be in that place. It's a very, very powerful place to be.

Wallace: Baker and Richards, like others who've participated in the program, say the future now looks much brighter.

Baker: I'm meditating and I'm using the techniques, using hypnosis, to be able to get myself whole, to make myself better.

Richards: I still come back here - this is my power point. I'm just glad I was able to have this experience.

Benson: If you are interested in learning more, consult your health care provider.

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Video Credits: Paralyzed veterans of America
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